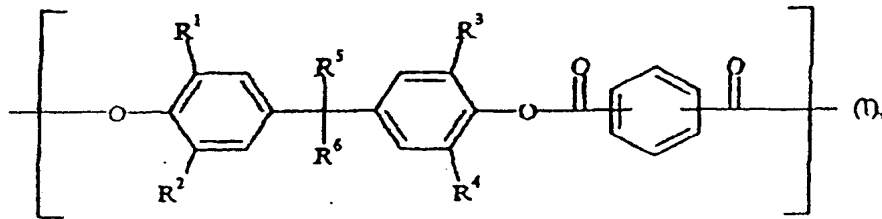


What is claimed is:

1. A thermoformed diaphragm made of cast polyarylate film, at least comprising one polyarylate having a structural unit of the formula



where

- each of R¹, R², R³, and R⁴, independently of the others, is hydrogen, C₁₋₄-alkyl, C₁₋₄-alkoxy, or halogen, and each of R₅ and R₆, independently of the other, is hydrogen, C₁₋₄-alkyl, C₁₋₄-alkoxy, phenyl, or halogen.

2. The thermoformed diaphragm as claimed in claim 1, characterized in that R¹ = R² and R³ = R⁴, and each, independently of the others, is hydrogen or C₁₋₄-alkyl.

3. The thermoformed diaphragm as claimed in claim 2, characterized in that R¹ = R² = R³ = R⁴, and are each hydrogen or C₁₋₄-alkyl.

4. The thermoformed diaphragm as claimed in at least one of claims 1 to 3, characterized in that each of R⁵ and R⁶, independently of the other, is C₁₋₄-alkyl, particularly preferably methyl.

5. The thermoformed diaphragm as claimed in at least one of claims 1 to 4 in a thickness of from 5 to 200 μm, preferably from 5 to 100 μm.

6. The use of the thermoformed diaphragms as claimed in claims 1 to 5 as diaphragms for acoustic transducers

for acoustic applications, preferably as microphone diaphragms and/or loudspeaker diaphragms.

7. The use as claimed in claim 6 in microphone capsules, mobile telephones, hands-free systems, radio sets, hearing devices, headphones, microradios, computers, PDAs, and/or signal generators.

8. A casting solution and/or a cast film produced therefrom, composed of polyarylate of the formula (I) of claim 1, characterized in that it comprises a dye, and/or comprises a nonionic polyol surfactant.

9. The polyarylate casting solution and/or cast polyarylate film produced therefrom as claimed in claim 8, characterized in that the nonionic polyol surfactant is selected from the group consisting of poly(ethylene glycol), poly(propylene glycol), and poly(tetramethylene oxide), and is used in the form of homopolymer, copolymer, block copolymer, or a mixture of these, preferably in the form of polyethylene-polypropylene block copolymer.

10. The polyarylate casting solution and/or cast polyarylate film produced therefrom as claimed in claim 8 or 9, characterized in that it comprises a dye such as "C.I. Solvent Yellow 93", "Solvent Yellow 202", or "Macrolex® Orange R", and/or comprises a nonionic polyol surfactant, such as "Pluronic® PE 6 800" or "Synperonic® F86 pract.".

11. The polyarylate casting solution and/or cast polyarylate film produced therefrom as claimed in at least one of claims 8 to 10, characterized in that the amount of the dye and/or of the nonionic surfactant present is from 0.001 to 2%, preferably from 0.001 to 0.15%.

12. The polyarylate casting solution as claimed in at least one of claims 8 to 11, characterized in that it comprises an amount of at least 10%, preferably from 15 to 25%, and particularly preferably from 20 to 24%, of the polyarylate.

13. A process for producing thermoformed diaphragms as claimed in claims 1 to 5 from cast polyarylate films as claimed in claims 8 to 11, characterized in that the cast polyarylate films are heated through irradiation with infrared light, where appropriate after a preparatory process, such as roll cutting, and are then deformed by means of thermoforming to give diaphragms, and are then, where appropriate, subjected to finishing processes.

14. The process for producing cast polyarylate films as claimed in claims 8 to 11, characterized in that polyarylate casting solutions as claimed in claims 8 to 12 are applied to a substrate, are peeled away from this substrate after a predrying period, and are then dried fully.

15. The process as claimed in claim 14, characterized in that the polyarylate casting solutions are applied to a continuous substrate, particularly preferably a steel belt which is matt or polished on one side, or a polished or matt stainless steel roll of circumference from 5 to 25 m.

16. The process as claimed in claim 14 or 15, characterized in that the polyarylate casting solutions are applied to an intermediate film conducted on the substrate and, after a predrying period, are peeled away together with the intermediate film from this substrate, and are then dried fully.

17. The process as claimed in claim 16, characterized in that the intermediate film used comprises a polyethylene terephthalate film.
- 5 18. The process as claimed in at least one of claims 14 to 17, characterized in that the average thickness of the cast polyarylate films after final drying is from 5 to 200 μm .
- 10 19. The process as claimed in any of claims 14 to 18, characterized in that use is also made of a solution-application or lamination process to coat the cast polyarylate films as claimed in claims 8 to 11.